

# Abex Corporation

Portsmouth, Virginia  
Superfund Program Site Fact Sheet

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**Type of Facility:** Former Brass and Bronze Foundry

**Contaminants:** Lead (primary)

**Funding:** Enforcement-funded

## Site Description and History

The Abex Corporation Superfund site is in a residential area in the eastern section of the City of Portsmouth. The largest residential area affected was the Washington Park Public Housing Development found north and west of the foundry. The complex housed approximately 160 families. Soil contamination was also found in a two-block area of 20 private homes southwest of the foundry.

From 1928 to 1978, the foundry melted used railroad car journal bearings supplied by railroad companies and recast the material into new bearings. Spent casting sand laden with heavy metals (primarily lead) was disposed in a one-acre area north of the foundry facility. The foundry furnace operation also produced stack emissions of fine particulate material associated with facility processes.

In 1986, EPA identified high lead concentrations in the foundry waste, in soil around the process area, and in off-site soil in residential lots next to the site. In August 1986, EPA entered a Consent Order requiring Abex Corporation to excavate and remove contaminated surface soil from specified areas, cover two disposal areas with asphalt, and erect security fences. Restoration by seeding and sodding was also required at unpaved areas where soil was excavated. On October 10, 1989, the Virginia Department of Environmental Quality (VDEQ), serving as the lead agency, entered into an Administrative Order on Consent, requiring Abex Corporation to conduct a Remedial Investigation / Feasibility Study (RI/FS). The report was completed in February 1992. Abex



Corporation conducted a removal action in March 1992, and lead-contaminated soil was removed from some residential areas. The Record of Decision (ROD), which formally outlines the cleanup action for Operable Unit 1, was signed on September 29, 1992. The ROD identifies two Operable Units (OUs).

- OU-1 consisted of contamination in the soil and waste sands at the site, the soils in the surrounding properties within a 700-foot radius of the site, and demolition of the facility buildings.
- OU-2 included further investigation of soils beyond the 700-foot radius, groundwater, and ecological impacts.

An Amendment to the ROD was issued in August of 1994. A formal letter of concurrence was sent by VDEQ on August 9, 1994. The revised remedy was based upon the premise that a residential neighborhood, a playground and some row houses would be rezoned commercial/industrial, and the institutional controls described in the remedy be in place no later than the completion of the preliminary remedial design for the remedy.

The major requirements of the remedy are:

- Excavation and removal of lead-contaminated soil above 500 ppm in residential areas not addressed in the March 1992 removal to the water table.
- Excavation and removal of soil contaminated with lead above 500 ppm in the top foot, and additionally soil contaminated with lead above 1000 ppm between one foot and two feet in commercial and/or industrial areas, with a synthetic warning layer placed below that.
- Demolition and removal of all structures associated with foundry operations on the Abex Lot, including excavation, stabilization, and off-site disposal of contaminated soils there.

The ROD also requires stabilization of soils, as necessary, temporary relocation of residents, as necessary, air monitoring during operations, placement of clean backfill, and revegetation.

In December 1995, the Abex Corporation, the City of Portsmouth, and the Portsmouth Redevelopment and Housing Authority (PRHA) agreed to design and conduct the cleanup work by signing a Consent Decree with EPA.

EPA approved final Remedial Design Work Plan for the Abex Corporation Superfund site. The Remedial Design Work Plans outlines the design and plan for action for the site cleanup EPA selected and described in the Record of Decision. The work plan addresses the following cleanup activities:

- Plans for digging up and treating the contaminated soil on the site.
- Plans for demolishing the former Abex Corporation Foundry Buildings. The foundry demolition was conducted in April and May 1997.
- Temporary relocation arrangements for residents affected by the cleanup work.

## **Threats and Contaminants**

Lead is the contaminant of principal concern at the site due to its known health effects and widespread presence in surface and subsurface soil in the residential areas and the foundry properties. Other contaminants present, along with lead, at levels of concern in residential areas include antimony, nickel, tin, copper, and zinc. These contaminants are all known to be present in the waste sands from the foundry operation. Other contaminants present at levels of concern on the foundry property, and in adjacent disposal areas, include cadmium, chromium, silver, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).

## **Cleanup Approach**

The site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on a cleanup of contaminated soil near the foundry and cleanup of other site related soil, groundwater, surface water, and sediment contamination identified. The major cleanup activities at the site includes the following:

- Demolishing the former Abex Corporation Foundry Buildings.
- Digging up all contaminated soil on site.
- Treating the contaminated soil on-site using stabilization technology (mixing excavated soil and waste material with chemicals).
- Transporting the treated soil to an off-site landfill and replacing it with clean fill.
- Capping or covering areas with residual contamination, including with asphalt pavement and possibly permanent municipal buildings that are slated for construction.

## **Current Site Status**

Abex Corporation conducted a removal action in March 1992 and lead-contaminated soil was removed from residential areas. The September 1992 ROD for Operable Unit 1 (OU-1) addresses the cleanup of contaminated soil and waste material within a 700-foot radius of the site, which includes the former foundry buildings. The selected remedial action for OU-1 addresses the principal threat at the site by excavating and treating the highly contaminated soils and waste material and by demolishing the buildings associated with the former foundry operation.

A five-year review for OU-1 was issued Summer 2002.

Operable Unit 2 will further investigate groundwater, offsite ecological impacts, and the need for additional remediation of soil contamination attributable to Abex operations beyond the 700-foot radius. Contaminated soils for residential and playground areas beyond the 700-foot radius will be excavated under a removal order. It is possible that groundwater and ecological impacts will be included in the removal order.

## **Community Relations and Concerns**

Area citizens, civic leaders, and local officials are quite concerned about the past and present health effects of lead. Several meetings have been held with them to listen to their concerns and suggestions. Supplemental lead education and prevention materials have been researched and disseminated.

Informal workshops and small-group meetings have been held often with local residents and officials. Community Relations staff members stay in contact with Portsmouth City officials on a regular basis. The Community Relations Plan was updated by EPA for the Remedial Design/Remedial Action (RD/RA). Concerns include the removal action, the disruption from construction during remedial activities, the health effects from lead, especially in children, and the effect on property values.

Interest levels increased in response to the ROD. Under the terms of the settlement of a separate judicial process, the residents of Washington Park Housing have been permanently relocated, and the former housing complex will be demolished.

EPA held a public availability session September 2001, including a presentation of the current site status and plans for the future.

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